

### **Amendments to the Claims**

This listing of claims will replace all prior versions, and listings of claims in the application:

- 1           1.     (Withdrawn) A method for detecting molecules, the method comprising:  
2           a)     determining the electronic status of a semi-conductor;  
3           b)     establishing electronic communication between the molecules and  
4     the semiconductor;  
5           c)     subjecting the semi-conductor to energy influx;  
6           d)     redetermining the electronic status of the semi-conductor.

#### Claims 2-27 (Canceled)

- 1           28.    (Currently Amended) A method for manipulating biological material in vivo,  
2     the method comprising:  
3           a)     covalently attaching a semi-conductor to a first biological moiety via a  
4                 charge transfer intermediary to create a construct;  
5           b)     inserting the construct into a living organism;  
6           c)     allowing the construct to migrate to the biological material;  
7           d)     creating a plurality of charges on the construct, wherein the size of the  
8                 charges and distances between the charges cause the biological material  
9                 to change in structure.
- 1           29.    (Original) The method as recited in claim 28 wherein the biological material  
2     comprises molecules selected from the group consisting of nucleotides, nitrogenous  
3     heterocyclic bases, amino acids, and combinations thereof.

1           30.     (Original) The method as recited in claim 28 wherein the charges are  
2     created by subjecting the construct to radiation.

1           31.     (Currently Amended) The method as recited in claim 30 wherein the  
2     radiation has an energy ~~greater than~~ of approximately 1.6 eV.

1           32.     (Currently Amended) The method as recited in claim 28 wherein the  
2     radiation has energy ranging from about 1.6 eV to ~~40~~ 3.2 eV.

1           33.     (Previously Presented) The method as recited in claim 28 wherein the step  
2     of creating a plurality of charges further comprises subjecting the construct to radiation  
3     selected from the group consisting of white light, beta rays, ultra violet light, X-rays or  
4     gamma rays, alpha rays, gamma rays, and combinations thereof.

1           34.     (Original) The method as recited in claim 28 wherein the biological material  
2     is nucleic acid and the construct changes the nucleic acid by cleaving it.

1           35.     (Original) The method as recited in claim 34 wherein the cleavage occurs  
2     when the semiconductor accumulates electrons from the first biological moiety.

1           36.     (Currently Amended) The method as recited in claim 28 wherein the  
2     semiconductor is a metal oxide selected from the group consisting of  $\text{TiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{VO}_2$ ,  
3      $\text{MnO}_2$ ,  $\text{NiO}$ ,  $\text{ZnO}$ ,  $\text{CuO}$ ,  $\text{FeO}$ ,  $\text{Fe}_3\text{O}_4$  and combinations thereof.

1           37.     (Withdrawn) The method as recited in 1 wherein the biological molecule  
2     is nucleic acid having base sequences interspersed with guanine.

1           38.   (Withdrawn) The method as recited in claim 30 wherein the source of  
2   radiation is a radioactive isotope selected from the group consisting of phosphorus-32,  
3   iodine- 123, iodine-131, sulfur-35, selenium-75, technetium-99, yttrium-90 and combina-  
4   tions thereof.

1           39.   (Withdrawn) The method as recited in claim 37 wherein the radioactive  
2   isotope is covalently attached to the semi-conductor.

1           40.   (Withdrawn) The method as recited in claim 40 wherein the source of the  
2   radiation is phosphorus-32.

1           41.   (New) The method as recited in claim 30 wherein the radiation is  
2   approximately 2 eV.